THE INFLUENCE OF CONTAGION INFORMATION AND BEHAVIOR ON OLDER ADOLESCENTS' PERCEPTIONS OF PEERS WITH CHRONIC ILLNESS

A Thesis

by

JONHENRY C. GRIZZLE

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

August 2004

Major Subject: Psychology

THE INFLUENCE OF CONTAGION INFORMATION AND BEHAVIOR ON OLDER ADOLESCENTS' PERCEPTIONS OF PEERS WITH CHRONIC ILLNESS

A Thesis

by

JONHENRY C. GRIZZLE

Submitted to Texas A&M University
in partial fulfillment of the requirements
for the degree of

MASTER OF SCIENCE

Approved as to style and content by:

Robert W. Heffer (Co-Chair of Committee)	David H. Gleaves (Co-Chair of Committee)
William A. Rae (Member)	Steve Rholes (Head of Department)

August 2004

Major Subject: Psychology

ABSTRACT

The Influence of Contagion Information and Behavior on Older Adolescents' Perceptions of Peers with Chronic Illness. (August 2004)

Jonhenry C. Grizzle, B.A., The University of Texas at Dallas

Co-Chairs of Advisory Committee: Dr. Robert W. Heffer
Dr. David H. Gleaves

To explore attributions about chronically ill peers, 545 older adolescents ages 17-26 read a short vignette describing a brief social encounter with a hypothetical peer suffering from a medical condition, and then responded to a series of questionnaires to assess their perceptions of that peer. Nine measures intended to assess perceptions of ill peers were developed and empirically validated. Test-retest reliability and internal consistency was moderate to good for all measures. Component structure of the Peer Acceptance Questionnaire (PAQ), Peer Acceptance Questionnaire – 3rd Person (PAQ-F), and Perceived Similarity Questionnaire (PSQ) were also evaluated. Principal components analysis yielded a 2-factor structure of Openness and Egalitarianism for both the PAQ and PAQ-F. A 6-factor structure of (a) Familial/Spiritual, (b) General Health, (c) Social, (d) Behavioral, (e) Physical, and (f) Educational was suggested for the PSQ. Results indicated an interaction between illness type and behavior on acceptance ratings, such that behavior potentiated the effect of illness type on acceptance. In addition, vignette characters with contagious illnesses were rated less favorably than those with non-contagious illnesses, and vignette characters displaying typical behavior were rated more favorably than either withdrawn or aggressive vignette characters. Illness-specific knowledge, ratings of perceived similarity, and ratings of assigned blame predicted acceptance ratings, whereas illness-specific knowledge and acceptance ratings predicted ratings of assigned blame.

Finally, significant differences were observed between first- and third-person ratings of both acceptance and assigned blame.

TABLE OF CONTENTS

Page

LIST OF FIGURES

LIST OF TABLES

INTRODUCTION

Significant advances have been made in the treatment of various physiological illnesses (e.g., cancer, AIDS, cystic fibrosis, epilepsy, diabetes, and asthma), that increase the probability for long-term survival of many patients previously considered untreatable. Furthermore, a moderate decrease has been observed in the degree of functional impairment accompanying these illnesses, such that many patients are now able to return to the lifestyles to which they were accustomed before the onset of illness. As a result, the focus of treatment has shifted somewhat, from crisis intervention towards the issues of coping and adjustment more relevant in enhancing the quality of life of these individuals. Nowhere is this more evident than with the case of chronically ill children.

Childhood is inherently a precarious period, when even minor disruptions can have a profound and lasting impact on the course of development. For this reason, children perceived to be successfully managing their illness are often encouraged to return to school as quickly as possible following treatment. Unfortunately, this creates inevitable complications upon the child's reintegration into the classroom setting, such as frequent absences, special academic needs, and residual symptomatology that often hinder their ability to participate effectively in class activities. These complications often can have the effect of alienating these children from peers, making it difficult to be accepted socially, and putting them at risk for a myriad of significant long-term adjustment problems. In particular, pediatric conditions that have been found to affect children's physical appearance (e.g., hair loss, skin lesions, and cranio-facial anomalies) or limit their physical activities (e.g., epilepsy and cystic fibrosis) have been associated with peer interaction problems (La Greca & Bearman., 2000). Therefore, it is critical that research be undertaken to further delineate the mechanisms of action underlying these disruptions, such that a more typical course of development may be approximated.

This thesis follows the style of the *Journal of Pediatric Psychology*.

CURRENT APPROACHES

Previous research has elucidated the role of social interaction as a prominent factor contributing to the psychosocial adjustment of children with chronic illness. For example, Hymel, Rubin, Rowden, and Lemarc (1990) investigated the predictive relation between social difficulties in early childhood (grade 2) and subsequent internalizing (e.g., social withdrawal) and externalizing (e.g., aggression) problems in middle childhood (grade 5). They found that peer rejection in early childhood was significantly predictive of both internalizing as well as externalizing problems in middle childhood.

A lack of appropriate social skills has been identified as one possibility accounting for the tendency that children with chronic illness seem to have difficulty attaining peer acceptance. As a result, work is currently being done to develop methods of social skills training toward enhancing the ability of chronically ill children to interact and relate socially to their peers. Specifically, it has been hypothesized that social skills training may enhance the social competence of children with chronic physical disorders by teaching the child a set of social skills that are particularly relevant to their illness and its treatment, subsequently facilitating positive social interactions with classmates and teachers, and resulting ultimately in greater perceived social support from these two essential interpersonal resources in the school environment (Varni et al., 1993). For this purpose, social skills have been defined as socially acceptable learned behaviors that enable a person to interact with others in ways that elicit positive responses, and assist in avoiding negative responses (Gresham & Elliott, 1984). In regards to chronically ill children, factors such as insufficient practice or feedback, lack of knowledge, lack of relevant contextual cues, or lack of reinforcement for socially skilled behaviors have been associated with particular deficits in social skills. Regardless of how one conceptualizes the components fundamental to social skill development, of interest to those performing social skills

interventions and assessment are both verbal and nonverbal interpersonal skills that facilitate positive responses from peers.

Four primary objectives have been involved in the development of current social skills training interventions: promoting skill acquisition, enhancing skill performance, reducing or removing competing problem behaviors, and facilitating the generalization and maintenance of skills (Gresham, 1998). Utilizing various operant, social learning, and cognitive-behavioral techniques, these objectives have been operationalized for the purpose of increasing social competence, and ostensibly peer acceptance. Schneider (1992) conducted a meta-analytic review of 79 controlled studies of children's social skills training, in which between-group designs of social learning and cognitive-behavioral procedures were reviewed. In his review, a moderate effect size (ES = .40) was obtained for the main effect of treatment, demonstrating the general viability of social skills training interventions. Studies in this area have found that, in general, modeling and coaching techniques tend to be most effective in increasing social skills, while social-cognitive techniques such as social problem solving and self-instruction tend to be the least effective.

The social skills training literature does reveal several weaknesses, however, the greatest of which has been the absence of consistent, durable, or socially important gains across situations and settings over time (Gresham, 1998). This lack of treatment generalizability may occur in part, because current approaches toward social skills training focus almost exclusively on deficits that may reside within the child, neglecting almost completely the social context within which behavior occurs. The efficacy of these interventions could possibly be enhanced by accounting for social context through the manipulation of various factors naturally present in the child's external environment, thereby promoting successful interactions with others by allowing

the child to operate in an environment free from any cultural stigma that may be associated with their illness.

Of particular relevance to this goal is the role played by peer perception in increasing acceptance of children with chronic illness, an area that to this point has received scant attention. Since a definition was not found in the literature, for the purposes of this study, *peer perception* was defined as those attitudes within the peer that influence, either directly or indirectly, the manner in which they interact with others. How children with chronic illness are perceived by their peers has an invariable impact on how they will be received within the peer group, subsequently influencing other areas of development. For instance, previous research with pediatric chronic physical disorders suggests that perceived social support may moderate the negative impact of stressful life events on psychological adjustment (Varni et al., 1993). Although many children are received well upon reintegration into the school setting, those who are received poorly often become isolated from their peers, promoting impediments toward future development. Specifically, problematic social behavior contributes to low peer acceptance, which in turn leads to deviant social and personal experiences and over time to maladjustment (La Greca, 1993). By delineating the various factors that influence peer perception of illness, it is hoped that methods of reintegration can be developed to optimize peer acceptance. Utilizing this knowledge in combination with current approaches toward social skills training can only serve to expand the efficacy of current interventions.

HISTORICAL PERSPECTIVES

Research concerning the factors influencing peer perception of chronic illness began in the 1950's with an initial focus on overt symptomatology and it's impact on the preferential rankings of children by peers (Richardson et al., 1961). Since then, it has progressed toward an appreciation of the more complex mechanisms underlying this phenomenon, such as type of impairment (functional versus cosmetic), degree of contact, and developmental differences in the understanding of and connotations towards illness. More recently, focus has shifted again toward the role of behavior in predicting peer perception.

Methodological Limitations

Although the existing body of literature has contributed greatly to our understanding of the mechanisms influencing peer perception of children with chronic illness, many problems are inherent within these studies, which limit the usefulness of their application toward the environmental context. The most pervasive of these problems is the conspicuous absence of any overarching theory driving the direction of research. While micro-theories abound in the interpretation of results from individual studies, no attempt has been made toward the integration of these theoretical mechanisms for the purpose of directing future research. This disjointed approach has slowed the advancement of our understanding of this phenomenon over the past several decades.

A second problem plaguing this area concerns the general dearth of psychometrically validated measures for use in exploring relevant domains of interest. One possible reason for this may be the fact that many of the constructs involved have been too loosely defined. For example, peer acceptance has been operationalized in terms of number of reciprocated friendship nominations (Nabors, 1993), quality of peer relationships (Graetz & Schute, 1995), preferential rankings (Richardson et al., 1961), peer ratings of attractiveness (Potter & Roberts, 1984),

willingness to share activities (Morgan et al., 1998), social distance (Tringo, 1970), and global evaluations of target children (Sigelman & Begley, 1987). Lacking an established consensus regarding the operational definition of these constructs, researchers have been given the latitude to select dependent measures based on their own idiographic interpretations. This had led to (a) the use of face valid measures that are often vulnerable to bias from social desirability response sets and faking (Ryan, 1981), and (b) large discrepancies among studies regarding the number and type of measures used. Thus, the likelihood that the constructs of interest have been adequately assessed cannot be determined.

A third problem concerning the interpretation of findings from the existing body of literature concerns the design of stimuli presented to participants. Most studies to date that have not utilized actual chronically ill children have presented participants with short vignettes in combination with drawings or pictures of chronically ill or disabled children. However, these materials are often presented within a context that is not environmentally valid. For example, Morgan et al. (1998) used a videotape to assess children's reactions to a peer presented as physically handicapped. In this videotape, either a boy or a girl (matched depending on the sex of the participant) who was seated in a wheelchair gave this brief speech:

> Hi, my name is Robby. I live in another state now, but I might be moving to your neighborhood soon. If I do, I'll be starting to your school and might be in your class. My favorite subjects in school are arithmetic and science but I also like reading and art. I have a brother in high school and a sister in kindergarten. I enjoy doing things with my brother – like going to the movies – but my little sister sometimes bugs me. My brother is on the tennis team and I sometimes go with my parents to see him play. I also like to watch TV and play computer games but I have to do my homework first. I have a lot of friends where I live now. And if I move, I don't like the thought of having to leave them. If I move to your neighborhood and school, I hope I'll make some new friends. Good-bye for now.

Stimuli of this type are inconsistent with the manner in which participants typically might interact with chronically ill peers, and thus are limited in the extent to which they may effect responses from participants that can be considered contextually valid.

A fourth problem concerning the existing literature is that many studies have failed to account for the effects of developmental level on participant's reactions toward their chronically ill peers. Variables posited to influence age-related differences in reactions toward the physically disabled include general cognitive development, moral development, the development of empathetic ability, and the development of role-taking ability (Ryan, 1981). Research into the development of children's conceptualizations of illness also has significant implications for how children perceive chronically ill peers. In particular, previous research has suggested that with age, children are likely to progress from an undifferentiated view of illness toward a more rational and articulated view that captures etiologically significant similarities and differences between disease entities (Sigelman & Begley, 1993). For instance, children typically first gain knowledge of common illnesses such as colds and the flu (Lau & Hartman, 1983). This knowledge is then often over-generalized toward all illnesses, predisposing them to be regarded as contagious and readily transmittable through casual contact. In addition, Sigelman and colleagues (1993) found that children are also more likely to encounter information about how specific illnesses *are* transmitted, rather than how they *are not* transmitted. These misconceptions may contribute to the perception of ill peers as threatening and/or contagious, thus increasing their likelihood of social exclusion.

Finally, while the current body of literature has made the necessary initial step in examining several possible variables influencing peer perception of illness in isolation, these phenomena rarely occur in isolation within the environmental context. Very few studies have examined the effects of these variables when manipulated systematically in combination with

one another. It is only in this manner that the bridge can successfully be made between knowledge and application.

PURPOSE OF THE PRESENT STUDY

The current study sought to further the extant body of literature in several ways. First, this study explored the interaction of variables in the prediction of the perception of older-adolescents toward peers with chronic illness. Specifically, of concern to the present study were those aspects posited to influence acceptance of peers with chronic illness. No consensus has been reached in the literature regarding a definition of peer acceptance. Therefore, for the purposes of this study, the construct of peer acceptance included not only the broad connotation of favorability of attitude, but also a willingness to spend time or share activities with a peer. Factors thought to influence peer acceptance that were examined included (a) behavior, illness type, and symptomatology of the ill individual, (b) previous experience with and illness-specific knowledge, and (c) perceived similarity to the ill individual.

Variables of Interest

Findings from previous research have uncovered several variables that may be of interest in predicting attributions about peers with chronic illness. In general, these attributions may be viewed as a product of the interaction between (a) characteristics of the self, (b) perceived characteristics of others, and (c) environmental context. For example, the decision an individual makes concerning whether or not to offer friendship towards classmates is based not only upon peer group influences, but also upon the characteristics of the ill individual, as well as characteristics within the scholastic environment (e.g., abilities required in the classroom). In other words, it is only after one's perceptions about others are related to the environmental context and filtered through the self that a decision regarding their desirability can be made. This conceptualization is depicted in Figure 1, which is an attempt to organize the key variables and variable relationships to be investigated here.

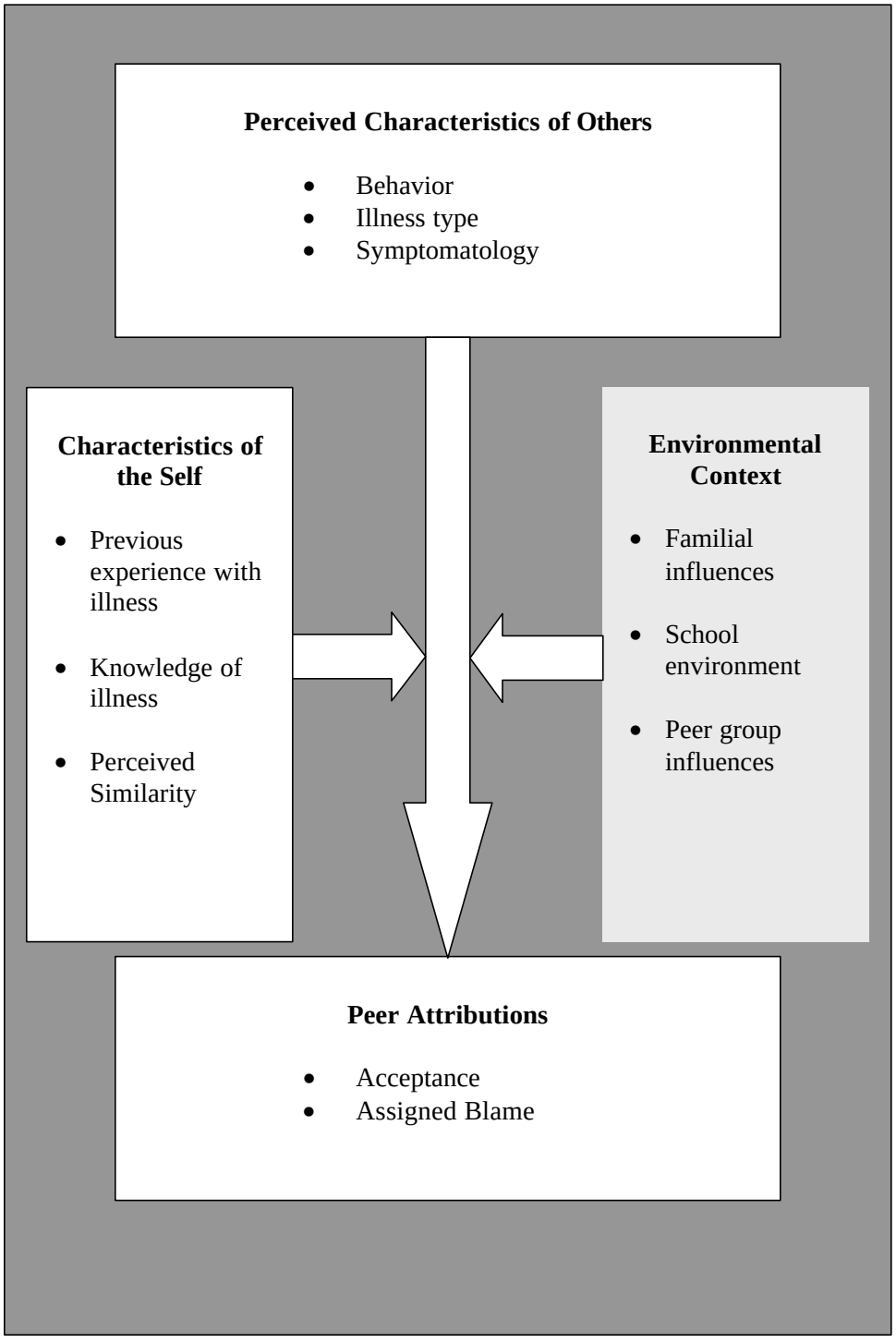

Figure 1. Key variable relationships determining peer attributions about individuals with chronic illness.

Characteristics of the Chronically Ill Child

This study explored several characteristics specific to both a chronically ill peer and adolescent respondents to predict peer acceptance. In regards to the chronically ill peer, two aspects found to influence peer acceptance include illness characteristics, and behavior characteristics of the afflicted individual. Richardson, Hastorf, Goodman, and Dornbusch (1961) investigated the role of overt symptomology in determining peer acceptance by comparing mean rank orders of drawings of children with various disabilities by non-handicapped children and handicapped children 10 to 11 years of age. In general, both non-handicapped and handicapped children were found to consistently rank groups in the same preferential order: (a) child with no physical handicap, (b) child with crutches and brace on left leg, (c) child sitting in wheelchair with blanket covering legs, (d) child with facial disfigurement on left side of mouth, and (e) obese child. Two possible interpretations for these results were offered. First, the authors suggested that children were ranked lowest whose disabilities limit their ability and involvement in physical activities, especially when at an age at which great emphasis is placed on physical activities (Richardson et al., 1961). Alternatively, the possibility was entertained that because the face is of primary importance in the initial assessment of another person, preference was highest for those children whose disability was most distant from the face (Richardson et al., 1961).

In 1970, Richardson followed up this cross-sectional study utilizing a longitudinal approach, again using drawings of children with handicaps to determine preferential rankings. Like the previous study, sex differences emerged with functional impairments being liked less by boys, and cosmetic impairments being liked less by girls. However, Richardson (1970) found that in general, although children with functional handicaps became more liked with age, children with cosmetic handicaps became less liked with age, with the greatest shift occurring with the onset of adolescence.

Harper, Wacker, and Cobb (1986) subsequently extended Richardson's work to investigate the effects of different situational contexts (e.g., play, school, social activities) on nondisabled and disabled children's stated preferences toward disabled peers. Utilizing Richardson's (1961) picture ranking task, Harper and colleagues obtained similar rankings for nondisabled peers. However, disabled children were found to report a different ranking: (a) child sitting in wheelchair with blanket covering legs, (b) child with no physical handicap, (c) child with crutches and brace on left leg, (d) child with facial disfigurement on left side of mouth, and (e) obese child. A questionnaire was also administered to determine the influence of social context and question type on peer preference. Three types of questions were included, simple preferences "Who do you like best?), one implying affiliation within an activity ("Who would you like to do this with?"), and one implying no affiliation ("Who does this best?"). Results suggested that questions of a physical nature (climbing trees versus watching television) tended to be associated with lower peer preference, while questions implying affiliation were also associated with lower peer preference.

Findings from these studies must be viewed with caution, however, as only mean rankings were used to determine peer preference of pictures of handicapped children. Alessi and Anthony (1969) partially replicated Richardson's 1961 study, and found that because mean rankings were used instead of correlational procedures, conclusions based on the obtained data may have been misleading. For example, although Alessi and Anthony (1969) obtained mean rankings similar to those of Richardson (1961), they found that almost all of the pictures were chosen either just as often or more often in a position different from the one hypothesized by Richardson. Furthermore, not one of the children in their replicated study ranked the pictures in the specific hypothesized order, although overall mean rankings were in the hypothesized order. Therefore, Alessis and Anthony (1969) concluded that a mean rank analysis was not sufficient to

reveal specific preference patterns or orderings. This is because it may be that all meaningful variance between responses is a function of only a few of the drawings (specifically, a strong agreement may exist between liking a healthy child the most and liking an obese child the least, but little more than chance variation in the rankings of other pictures (Alessi & Anthony, 1969).

Potter and Roberts (1984) assessed the influence of symptom observability, amount of information provided concerning the illness, and level of cognitive development, on peer acceptance. Specifically, vignettes were used to convey either descriptive or explanatory information about either an observable (epilepsy) or covert (diabetes) illness. In general, they found that observable illnesses tended to be seen as less attractive to peers.

The behavior of children with chronic illness is another factor that has commonly been posited to influence peer acceptance. Lavigne and Faler-Routman (1992) reviewed 87 studies of children's adjustment to physical disorders in a meta-analysis. They found that children with such disorders show significantly increased risk for internalizing behaviors (e.g., withdrawal) as well as externalizing behaviors (e.g., aggression). However, it is unclear whether these behaviors are a direct result of chronic illness, or a by-product of peer rejection these children often suffer because of illness. In addition, Hymel, Rubin, Rowden, and Lemarc (1990) investigated the predictive relation between social difficulties in early childhood (grade 2) and subsequent internalizing (e.g., social withdrawal) and externalizing (e.g., aggression) problems in middle childhood (grade 5) and found that peer rejection in early childhood was significantly predictive of both internalizing as well as externalizing problems in middle childhood.

Given the evidence at hand, it is curious that so little research has been conducted to explore the influence of these behaviors on the perception of peers. The few studies conducted to date have shown that handicapped children who exhibit negative behavior tend to be rejected by their peers. For example, Gottlieb (1975) presented 48 third grade pupils with a videotape of a

child actor exhibiting either passive or acting-out behavior. In addition, half of the participants were then told that the actor in the video was mentally retarded. Results indicated a significant interaction between label and behavior, with subjects responding more negatively to the "mentally retarded" actor who displayed acting-out behavior than to the same actor who exhibited identical behavior but was not labeled (Gottlieb, 1975). In both instances, participants rated actors exhibiting passive behavior more positively. No studies have yet examined specifically the effect of internalizing behaviors on peer acceptance of chronically ill children.

Peer Characteristics

In comparison to characteristics of the afflicted child, relatively little attention has been paid thus far to characteristics of peers themselves that influence acceptance. Peer knowledge of illness, previous experience with illness, and perceived similarity are three peer characteristics that may be of particular interest in determining peer acceptance. Novak and Lerner (1968) suggested that when persons perceive themselves as similar to an individual and vulnerable to some negative characteristic of this individual, attraction decreases due to the sense of personal threat (i.e., as perceived similarity increases, attraction decreases).

Maieron, Roberts, and Prentice-Dunn (1996) examined the impact of contagion information, perceived similarity, and illness conceptualization on children's perceptions of peers with AIDS. Specifically, children in grades 4-6 were asked to read vignettes containing one of four levels of contagion information: (a) information on how AIDS *is* and *is not* transmitted, (b) only information on how AIDS *is* transmitted, (c) only information on how AIDS *is not* transmitted, and (d) no information. Also, vignettes contained one of two levels of perceived similarity: (a) matched with the interests and disinterests of the hypothetical peer, or (b) presented neutral information. Children in conditions (b) and (d) reported no change in acceptance after reading the vignette, while children in conditions (a) and (c) reported a positive

change in acceptance. In addition, although children in the matched similarity group did feel more similar to the hypothetical peer, they did not view the peer more negatively than those who were presented with neutral information.

As stated above, Potter and Roberts (1984) assessed the influence that type of information provided concerning the illness (either descriptive or explanatory), symptom observability (either overt or covert), and level of cognitive development on peer acceptance. In addition to the finding that more observable illnesses were seen as less attractive to peers, provision of information about the nature of an observable illness tended to decrease rather than increase peer acceptance.

Yet another peer characteristic of interest to researchers in this area is the degree of blame (for their disorder) that peers spontaneously assign to children with chronic illness. Sigelman and Begley (1987) assessed this phenomenon by presenting children of varying ages with audiotapes of a teacher describing four children in her classroom, each with a distinct problem (either wheel-chair bound, obese, learning-disabled, or aggressive). Participants were then provided with one of two levels of causal information. Specifically, they were told either that the problem had a controllable cause or that the problem was uncontrollable. After obtaining ratings of acceptance and assigned blame, Sigelman and Begley (1987) found that children's ratings of these audiotapes became more positive as the attributions of personal responsibility and blame decreased.

In addition, Santilli and Roberts (1993) assessed the level of impact of children's developmental level of illness conceptualization and degree of assigned responsibility on children's reactions to peers belonging to one of three illness conditions (either AIDS, cystic fibrosis, or no label). They found that children who viewed peer's level of responsibility for their

illness as low tended to endorse higher ratings of acceptance than those who held peers more personally responsible.

Previous experience with illness is another characteristic that has garnered some attention as a variable influencing perception of peers with chronic illness. Voeltz (1980) administered an attitude survey to 2,636 public school children with one of three levels of contact with severely handicapped children: (a) no-contact, (b) low-contact, and (c) high-contact. They found that children in the study were most likely to indicate a desire to interact socially with handicapped children if they were enrolled in schools where interactions with severely handicapped children were possible and occurring regularly. Based on these data, it was posited that the attitudes of children are subject to change as a function of the opportunities and demands placed upon those attitudes by members of the social system (Voeltz, 1980).

Age should be noted as an additional variable that has been found to affect attitudes of children toward peers with disabilities. Specifically, between grammar and junior high school, the general attitudes of children toward the disabled have been shown to increase. Katz et al., (1976) examined the reactions of both kindergarten and fourth grade children to adults confined to a wheelchair and found that older children were consistently more helpful to a handicapped adult than were younger children. During the high school years, however, attitudes toward the disabled appear to decrease in favorability. Higgs (1975) assessed the attitudes of several age groups (e.g., eighth graders, college students, and their parents) toward the disabled and found that high school students exhibited less knowledge about, lower contact with, and less positive attitudes toward the disabled. Subsequently, attitudes again become more favorable for those who proceed to college. Tringo (1970) utilized the Disability Social Distance scale to assess high school students, college students, and graduate students attitudes toward the disabled, and concluded that attitudes towards the disabled increased in favorability with increased age and

(academic) education. Education, however, may contribute substantially to this increase, as others have found that the reactions of adults who have not attended college are likely to be more unfavorable that the reactions of adults who have attended college (Simmons, 1949 from Ryan, 1981). The literature has painted a developmental picture of attitudes toward the disabled in which favorability increases between grammar and high school, at which time this increase ceases and could even reverse. Finally, favorability again increases for college-aged individuals.

HYPOTHESES

The purpose of this study was to investigate the influence of various adolescent-respondent variables and ill peer variables on older-adolescent's acceptance of peers with chronic illness. Based on the model shown in Figure 1, the following hypotheses were submitted:

1. Significant differences in peer acceptance would be observed for chronically ill individuals with various illness types. Illnesses that are perceived to be contagious (i.e., AIDS) would elicit lower peer acceptance from peers than illnesses perceived to be non-contagious (i.e., cancer). In addition, individuals with overt illness symptomatology would elicit lower peer acceptance than individuals with covert illness symptomatology.
2. Significant differences in acceptance would be observed for chronically ill peers exhibiting various types of behavior. Peers exhibiting typical behavior would elicit higher peer acceptance than either aggressive or withdrawn individuals. Aggressive peers would elicit lower acceptance than withdrawn persons, or persons exhibiting typical behavior.
3. Ratings of assigned blame would predict acceptance of the chronically ill peer. Higher ratings of assigned blame would correspond with lower acceptance of ill peers.
4. Knowledge of illness would predict both acceptance of and degree of assigned blame toward the chronically ill peer. Greater illness knowledge would correspond with lower ratings of assigned blame and higher acceptance.
5. Previous experience with illness would predict acceptance of and degree of assigned blame toward the chronically ill peer. Greater experience would correspond with lower ratings of assigned blame and higher acceptance.

6. Ratings of perceived similarity would predict acceptance of the chronically ill peer. Higher ratings of similarity to the peer would correspond with higher acceptance of the peer.
7. Significant differences between first- and third-person ratings of acceptance and assigned blame would be observed, with respondents rating the chronically ill peer more favorably from a first-person point of view.

METHOD

Participants

The sample was 545 older adolescent students between the ages of 17 and 26, recruited from undergraduate psychology classes at Texas A&M University. See Figure 2 for distribution of participant age in the current sample compared to normal curve. Demographic characteristics of the sample are shown in Table 1 (data were missing for two participants).

Procedure

All subjects received course credit in return for their participation in the study. Participants completed assessment measures in group format, where groups of approximately 20-50 students read a short vignette describing a social encounter with a hypothetical adolescent peer suffering from chronic illness and subsequently responded to a series of questionnaires intended to assess their perceptions and connotations regarding the peer. Each vignette varied with regard to: (a) the gender of the peer (matched with the participant), (b) type of illness the peer was suffering from (non-contagious/Cancer, contagious/AIDS, contagious/Conjunctivitis), and (c) type of behavior exhibited by the peer in the interaction (aggressive, withdrawn, or normal).

Measures

Demographic information. Participants completed a brief demographic questionnaire including the following information: (a) age, (b) sex, (c) ethnicity, (d) primary language spoken, (e) college major, (f) highest education level of mother and and/or father, and (g) primary residence over the past 4 years.

Experience with illness. Experience with illness was assessed using the Previous Experience with Illness Questionnaire (PEIQ). The PEIQ was developed specifically for the purpose of this study. Respondents were asked to indicate (a) whom, if any of their close friends

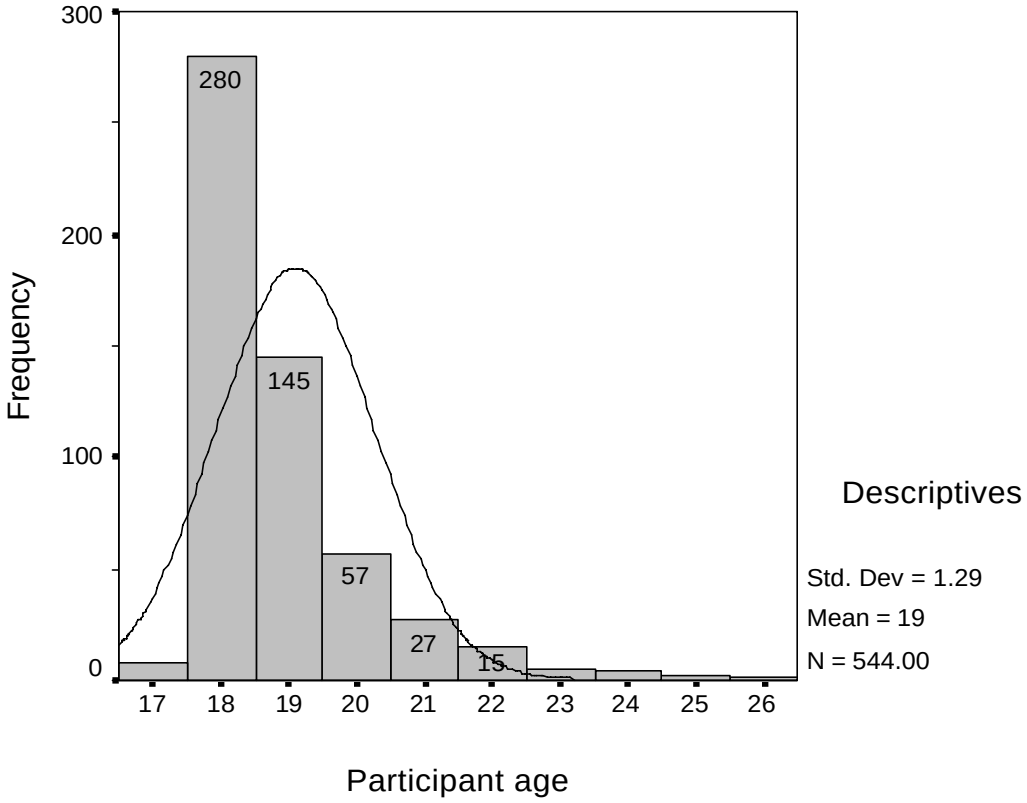

Figure 2. Distribution of participant age in the current sample compared to normal curve.

Table 1

Sample Demographics

Demographic variable	Total sample (*N = 543)*	
Age in years		
M (SD)	18.85 (1.29)	
Range	17-26	
Gender		
Male	238 (43.7)	
Female	307 (56.3)	
Ethnicity		
African-American	18 (3.3)	
Asian	18 (3.3)	
Euro-American	444 (81.5)	
Hispanic/Latino-American	50 (9.2)	
Native-American	6 (1.1)	
Other	7 (1.3)	
Primary language spoken in home		
English	522 (95.8)	
Spanish	14 (2.6)	
Other	7 (1.3)	
College major		
Psychology	48 (8.8)	
Other	495 (90.8)	
Highest education completed by:	Mother	Father
Less than 12th grade	19 (3.5)	21 (3.9)
High school diploma	115 (21.1)	109 (20.0)
2-year jr. college/vo-tech degree	81 (14.9)	56 (10.3)
4-year college/university degree	215 (39.4)	201 (36.9)
master's, doctorate, other graduate degree	113 (20.7)	156 (28.6)
Primary residence over last 4 years		
Mother	72 (13.2)	
Father	15 (2.8)	
Both	426 (780.2)	
Neither	32 (5.8)	

Note. Values in parentheses reflect percentages unless otherwise specified.

or family members have ever suffered from a chronic or life-threatening illness, (b) what type of illness they suffered from (e.g., either AIDS, Cancer, or Other), (c) how close they were to this person, (e.g., not very close, somewhat close, or very close), and (c) their frequency of contact with this person (e.g., daily, once a week, once a month, once every six months, or once every year or less).

Because the PEIQ was developed for the present study, scale reliability was assessed. Test-retest reliability (7 days) of the PEIQ was evaluated on a sub-sample of 42 participants (r = .84, p < .001). Scale reliability data for all measures are presented in Table 2.

Knowledge of illness. Knowledge of illness was assessed using the Cancer Knowledge Survey (CKS), the AIDS Knowledge Survey (AKS), and the Conjunctivitis Knowledge Survey (CJKS). These measures utilize a dual response format. Specifically, respondents were be asked to respond to a series of Likert-type items tapping general illness knowledge, each scored 1-6, as well as to select specific illness risk factors from a list. Items were adapted from the Attitudes Toward AIDS Scale (Goh, 1993), an AIDS questionnaire developed by the Centers for Disease Control and Prevention (Leake et. al, 1997), and cancer knowledge questionnaires developed and utilized by previous studies (Michielutte & Diseker, 1982; Stone & Siegel, 1986).

Because these measures were developed for the present study, scale reliability was assessed. Test-retest reliabilities (7 days) of the CKS (r = .63, p < .05), AKS (r = .74, p < .001), and CJKS (r = .77, p < .01), were evaluated on a sub-sample of 42 participants. Scale reliability data for all measures are presented in Table 2.

Perceived similarity. Perceived similarity was assessed using the Perceived Similarity Questionnaire (PSQ). This measure contains a series of Likert-type items, each scored 1-6. Items were generated for the specific purposes of this study. A dimensional approach to item generation was utilized, tapping several domains, including social (9 items, e.g., “This person is

Table 2

Scale Reliability Indices

Measure	Chronbach's alpha	Test-retest reliability
Previous Experience with Illness Questionnaire (PEIQ)	---	.84
Cancer Knowledge Survey (CKS)	---	.63
AIDS Knowledge Survey (AKS)	---	.74
Conjunctivitis Knowledge Survey (CJKS)	---	.77
Perceived Similarity Questionnaire (PSQ)	.92	.89
Peer Acceptance Questionnaire (PAQ)	.85	.88
Peer Acceptance Questionnaire–3rd person (PAQ-F)	.87	.91
Assigned Blame Questionnaire (ABQ)	---	.69
Assigned Blame Questionnaire–3rd person (ABQ-F)	---	.60

similar to my current set of friends."), educational (6 items, e.g., "This person is about as intelligent as I am."), behavioral (4 items, e.g., "This person's behavior is similar to how I typically behave."), physical features (5 items, e.g., "This person might look similar to me."), familial (5 items, e.g., "It is likely that this person's family experiences growing up have been similar to mine."), spiritual (3 items, e.g., "This person is about as spiritual as I am."), general health (5 items, e.g., "I think that this person gets sick with common illnesses about as often as I do."), and overall similarity (3 items, e.g., "Overall, my life is similar to this person's life.") to the hypothetical peer.

Because the PSQ was developed for the present study, scale reliability was assessed, and an analysis of scale items was conducted using principal components extraction and oblique (i.e., oblimin) rotation. Internal consistency reliability was assessed using Cronbach's alpha and item-total correlations. Cronbach's alpha was calculated to be .92 (good), with a range of item-total correlations from .24 to .71. Test-retest reliability (7 days) of the PSQ was evaluated on a sub-sample of 42 participants ($r = .89$, $p < .001$). Scale reliability data for all measures are presented in Table 2.

Examination of the appropriateness of the data for factor analysis indicated that sampling adequacy was "marvelous" (overall MSA = .94; Kaiser, 1981). Individual item MSA's were examined, and ranged from .85 to .97. As a result, all items were retained within the measure. A principal components analysis was conducted, and as subscales were expected to be intercorrelated, an oblique rotation (i.e., oblimin) was performed. Seven components had eigenvalues greater than one. However, the scree plot supported retaining only six components. Based on an examination of item content and loadings of the structure matrix, these six components appeared to measure: (a) Familial/Spiritual, (b) General Health, (c) Social, (d) Behavioral, (e) Physical, and (f) Educational (see Table 3 for structure loadings). Combined,

Table 3

Structure Loadings for the Perceived Similarity Questionnaire (PSQ)

	Component					
	1	2	3	4	5	6
PSQ item 1	.233	.261	.225	-.792	.265	-.097
PSQ item 2	.261	.022	.258	-.317	.517	-.258
PSQ item 3	.239	.235	.257	-.815	.249	-.187
PSQ item 4	.188	.517	.174	-.349	.677	-.027
PSQ item 5	.398	.157	.267	-.323	.748	-.240
PSQ item 6	.671	.014	.221	-.261	.470	-.229
PSQ item 7	.789	.115	.313	-.372	.300	-.377
PSQ item 8	.631	.227	.504	-.447	.490	-.316
PSQ item 9	.582	.068	.384	-.282	.561	-.351
PSQ item 10	.356	.000	.085	-.646	.193	-.302
PSQ item 11	.395	.459	.255	-.369	.664	-.202
PSQ item 12	.595	.224	.350	-.302	.640	-.264
PSQ item 13	.774	.254	.322	-.328	.366	-.286
PSQ item 14	.826	.135	.320	-.354	.224	-.380
PSQ item 15	.622	.211	.510	-.553	.436	-.266
PSQ item 16	.623	-.012	.364	-.315	.505	-.463
PSQ item 17	.393	.251	.241	-.860	.339	-.289
PSQ item 18	.298	.700	.208	-.296	.201	-.035
PSQ item 19	.582	.521	.307	-.247	.544	-.203
PSQ item 20	.712	.285	.394	-.459	.263	-.406
PSQ item 21	.404	.111	.730	-.345	.404	-.290
PSQ item 22	.533	.069	.365	-.380	.409	-.492
PSQ item 23	.111	.714	.138	-.134	.152	.133
PSQ item 24	.546	.344	.513	-.388	.535	-.326
PSQ item 25	.319	-.016	.785	-.208	.200	-.364
PSQ item 26	.195	.295	.668	-.108	.177	-.288
PSQ item 27	.315	.404	.631	-.241	.021	-.446
PSQ item 28	.304	.069	.839	-.255	.221	-.449
PSQ item 29	.385	.029	.496	-.245	.304	-.817
PSQ item 30	.189	.348	.732	-.213	.043	-.410
PSQ item 31	.385	.030	.485	-.272	.310	-.852
PSQ item 32	.585	.126	.491	-.335	.167	-.759
PSQ item 33	.493	.145	.607	-.399	.275	-.775
PSQ item 34	.635	.139	.436	-.346	.147	-.725
PSQ item 35	.358	.380	.635	-.400	.160	-.676
PSQ item 36	.362	.403	.340	-.634	.201	-.584
PSQ item 37	.091	.737	.250	-.339	.139	-.310
PSQ item 38	.285	.686	.412	-.370	.367	-.420
PSQ item 39	.479	.497	.457	-.560	.455	-.374
PSQ item 40	.440	.419	.413	-.511	.274	-.540

Note. 1= Familial/Spiritual, 2= General Health, 3= Social, 4= Behavioral, 5= Physical, 6= Educational.

these six components accounted for 61.02% of the total variance. Independently, the familial/spiritual, general health, social, behavioral, physical, and educational components accounted for 22.87%, 11.51%, 20.09%, 17.63%, 14.75%, and 18.55% of the variance, respectively. It is important to note that because an oblique rotation was conducted some of this variance is shared, and thus the independent estimates of variance sum to a higher value than the unrotated cumulative percentage. Correlations between these components are listed in Table 4.

Peer acceptance. Prior research has suggested that peers tend to rate children with chronic illness more positively when responding from a first-person perspective than when responding from a third-person perspective (Morgan et. al, 1998). This differential response pattern may indicate the utilization of socially desirable response sets by children when rating chronically ill peers. To investigate this possibility, peer acceptance was assessed using the Peer Acceptance Questionnaire (PAQ), and the Peer Acceptance Questionnaire – 3rd Person (PAQ – F). These measures assess peer acceptance from both a first-person (e.g., "I like this person.") and a third-person (e.g., "My friends would like this person.") point of view using a series of Likert-type items, each scored 1-6. Items were adapted from Maieron et al. (1996) and designed to tap affective (6 items, e.g., "I would be anxious if I were around this person."), behavioral (6 items, e.g., "I would try to be this person's friend."), and cognitive (6 items, e.g., "I think that this person can make friends with others on my campus.") dimensions of acceptance of the hypothetical peer.

Because the PAQ was developed for the present study, scale reliability was assessed, and an analysis of scale items was conducted using principal components extraction and oblique (i.e., oblimin) rotation. Internal consistency reliability of the PAQ was assessed using Cronbach's alpha and item-total correlations. Cronbach's alpha was calculated to be .85 (good), with a range of item-total correlations from .23 to .80. Test-retest reliability (7 days) was evaluated on a sub-

Table 4

Component Correlation Matrix for the PSQ

Component	Familial/Spiritual	General Health	Social	Behavioral	Physical	Educational
Familial/spiritual	---					
General health	.143	---				
Social	.352	.224	---			
Behavioral	-.365	-.247	-.267	---		
Physical	.389	.164	.244	-.302	---	
Educational	-.364	-.087	-.435	.296	-.146	---

Note. 1= Familial/Spiritual, 2= General Health, 3= Social, 4= Behavioral, 5= Physical, 6= Educational.

sample of 42 participants (r=.88, p<.001). Scale reliability data for all measures are presented in Table 2.

Examination of the appropriateness of the data for factor analysis indicated that sampling adequacy was “marvelous” (overall MSA = .94; Kaiser, 1981). Individual item MSA’s were examined, and ranged from .84 to .97. As a result, all items were retained within the measure. A principal components analysis was conducted, and as subscales were expected to be intercorrelated, an oblique rotation (i.e., oblimin) was performed. Three components had eigenvalues greater than one. However, the scree plot supported retaining two components. Based on an examination of item content and loadings of the structure matrix, these two components appeared to measure: (a) Openness and (b) Egalitarianism (see Table 5 for structure loadings). Combined, these two components accounted for 54.19% of the total variance. Independently, the Openness component accounted for 43.60% of the variance and the Egalitarianism component accounted for 21.48%. It is important to note that because an oblique rotation was conducted some of this variance is shared, and thus the independent estimates of variance sum to a higher value than the unrotated cumulative percentage. The correlation between these two components was .42.

Scale reliability of the PAQ-F was also assessed, and an analysis of scale items conducted using principal components extraction and oblique (i.e., oblimin) rotation. Internal consistency reliability of the PAQ-F was assessed using Cronbach's alpha and item-total correlations. Cronbach's alpha was calculated to be .87 (good), with a range of item-total correlations from .30 to .80. Test-retest reliability (7 days) of the PAQ-F was evaluated on a sub-sample of 42 participants (r = .91, p < .001). Scale reliability data for all measures are presented in Table 2.

Table 5

Structure Loadings for the Peer Acceptance Questionnaire (PAQ)

	Component	
	1	2
PAQ item 1	.854	.272
PAQ item 2	.853	.276
PAQ item 3	.687	.327
PAQ item 4	.862	.336
PAQ item 5	.859	.293
PAQ item 6	.320	.622
PAQ item 7	-.179	-.623
PAQ item 8	.832	.374
PAQ item 9	.645	.418
PAQ item 10	.685	.544
PAQ item 11	.874	.383
PAQ item 12	.716	.155
PAQ item 13	-.634	-.393
PAQ item 14	.683	.541
PAQ item 15	.286	.703
PAQ item 16	-.386	-.222
PAQ item 17	.357	.729
PAQ item 18	.472	.577

Note. 1= Openness, 2= Egalitarianism

Examination of the appropriateness of the data for factor analysis for the PAQ-F indicated that sampling adequacy was "marvelous" (overall MSA = .96; Kaiser, 1981 pp.379-381). Individual item MSA's were examined, and ranged from .90 to .97. As a result, all items were retained within the measure. A principal components analysis was conducted, and as subscales were expected to be intercorrelated, an oblique rotation (i.e., oblimin) was performed. Three components had eigenvalues greater than one. However, the scree plot supported retaining two components. Based on an examination of item content and loadings of the structure matrix, these two components appeared to measure: (a) Openness and (b) Egalitarianism (see Table 6 for structure loadings). Combined, these two components accounted for 59.83% of the total variance. Independently, the Openness component accounted for 49.67% of the variance, while the Egalitarianism component accounted for 34.48%. It is important to note that because an oblique rotation was conducted some of this variance is shared, and thus the independent estimates of variance sum to a slightly higher value than the unrotated cumulative percentage. The correlation between these two components was .59.

Assigned blame. Assigned blame was assessed using the Assigned Blame Questionnaire (ABQ), and the Assigned Blame Questionnaire – 3rd Person (ABQ – F). These measures assess attributions about assigned blame from both a first- and third-person point of view using two Likert-type items, each scored 1-6. Items were generated for the specific purposes of this study, tapping illness (e.g., "I think that this person is to blame for his/her medical condition.") and behavior (e.g., "I think that it is this person's fault that he/she acts the way he/she does."). Because these measures were developed for the present study, scale reliability was assessed. Test-retest reliabilities (7 days) of the ABQ (r = .69, p < .005) and ABQ-F (r = .60, p <.001) were evaluated on a sub-sample of 42 participants. Scale reliability data for all measures are presented in Table 2.

Table 6

Structure Loadings for the Peer Acceptance Questionnaire – 3rd Person (PAQ-F)

	Component	
	1	2
PAQ-F item 1	.852	-.557
PAQ-F item 2	.874	-.481
PAQ-F item 3	.759	-.602
PAQ-F item 4	.856	-.542
PAQ-F item 5	.868	-.542
PAQ-F item 6	.429	-.755
PAQ-F item 7	-.310	.636
PAQ-F item 8	.857	-.549
PAQ-F item 9	.700	-.544
PAQ-F item 10	.660	-.675
PAQ-F item 11	.888	-.446
PAQ-F item 12	.765	-.327
PAQ-F item 13	-.651	.597
PAQ-F item 14	.805	-.573
PAQ-F item 15	.481	-.684
PAQ-F item 16	-.319	.441
PAQ-F item 17	.530	-.800
PAQ-F item 18	.627	-.627

Note. 1= Openness, 2= Egalitarianism

RESULTS

Illness, Symptomatology, and Behavior

To assess group differences on acceptance, a 3-way factorial analysis of variance was conducted with illness type (cancer, AIDS, or conjunctivitis), symptomatology (covert or overt), and behavior (typical, withdrawn, or aggressive) as categorical independent variables and peer ratings of acceptance as the dependent variable. Findings revealed an interaction between illness type and behavior, $F(4, 544)=2.849$, $p<.05$, $?2=.021$. See Figure 3 for a graphical depiction of this interaction. In addition, significant differences on peer ratings of acceptance were observed across illness type, $F(2, 544)=44.671$, $p<.001$, $?2=.145$, and behavior type, $F(2, 544)=48.296$, $p<.001$, $?2=.155$, but not across symptomatology type, $F(1, 544)=2.626$, p=.106, $?2=.005$.

To examine the simple effects of behavior on illness type, one-way ANOVA's were independently performed for each illness type, with behavior as the independent variable and peer ratings of acceptance as the dependent variable. For the cancer illness type, a significant effect of behavior was found on peer ratings of acceptance, $F(2, 184)=25.455$, $p<.001$, $?2=.220$. Tukey post-hoc HSD tests revealed significant differences on peer ratings of acceptance between the typical and withdrawn conditions ($p<.01$), withdrawn and aggressive conditions ($p<.001$), and typical and aggressive conditions ($p< .001$). For the AIDS illness type, a significant effect of behavior was found on peer ratings of acceptance, $F(2, 167)=5.943$, $p<.005$, $?2=.068$. Tukey post-hoc HSD tests revealed significant differences on peer ratings of acceptance between the withdrawn and aggressive conditions ($p<.05$) and typical and aggressive conditions ($p< .005$), but not between the typical and withdrawn conditions ($p=.873$). For the conjunctivitis illness type, a significant effect of behavior was found on peer ratings of acceptance, $F(2, 193)=24.621$, $p<.001$, $?2=.206$. Tukey post-hoc HSD tests revealed significant differences on peer ratings of acceptance between the typical and withdrawn conditions ($p<.001$) and typical and aggressive

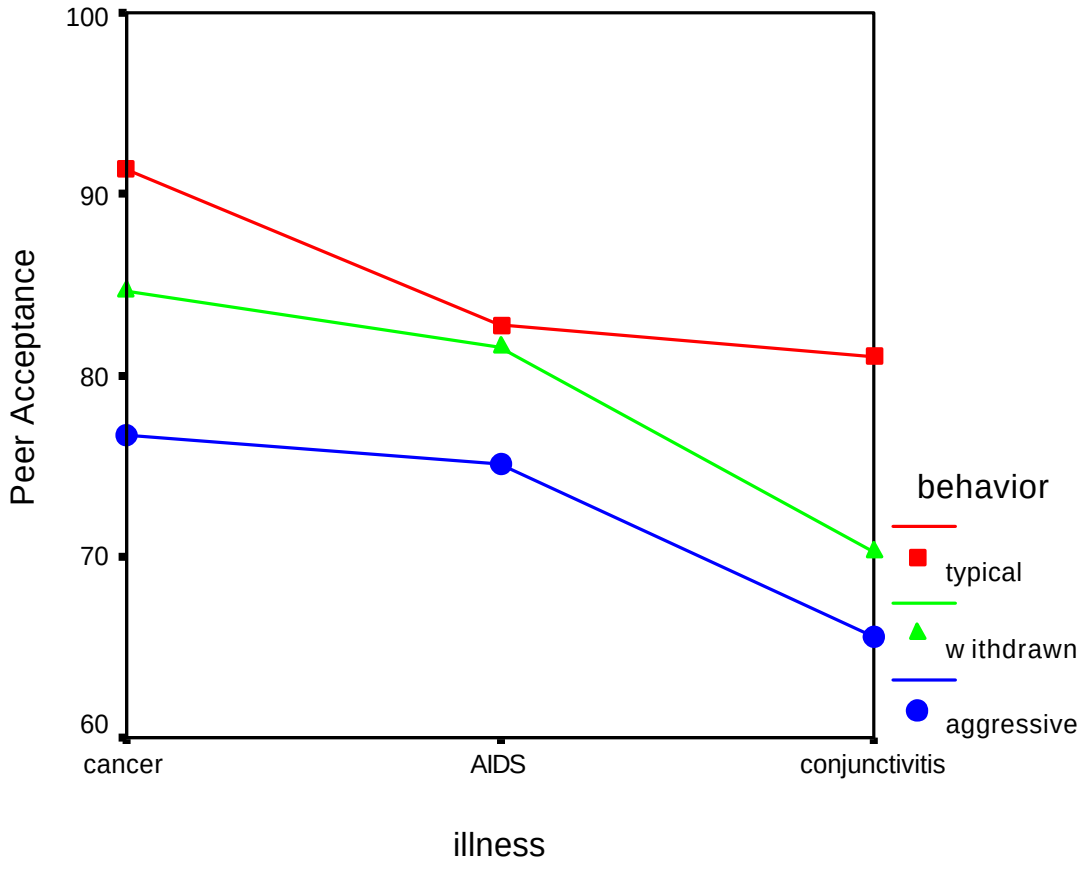

Figure 3. Interaction of illness type and behavior.

conditions ($p < .001$), but not between the withdrawn and aggressive conditions ($p = .068$).

To examine the simple effects of illness type on behavior, one-way ANOVA's were independently performed for each behavior condition, with illness type as the independent variable and peer ratings of acceptance as the dependent variable. For the typical behavior condition, a significant effect of illness type was found on peer ratings of acceptance, $F(2, 177) = 14.725$, $p < .001$, *?2*=.145. Tukey post-hoc HSD tests revealed significant differences on peer ratings of acceptance between the cancer and AIDS illness types ($p < .001$) and cancer and conjunctivitis illness types ($p < .001$), but not between the AIDS and conjunctivitis illness types ($p = .622$). For the withdrawn behavior condition, a significant effect of illness type was found on peer ratings of acceptance, $F(2, 174) = 22.203$, $p < .001$, *?2*=.206. Tukey post-hoc HSD tests revealed significant differences on peer ratings of acceptance between the cancer and conjunctivitis illness types ($p < .001$) and AIDS and conjunctivitis illness types ($p < .001$), but not between the cancer and AIDS illness types ($p = .457$). For the aggressive behavior condition, a significant effect of illness type was found on peer ratings of acceptance, $F(2, 193) = 14.510$, $p < .001$, *?2*=.132. Tukey post-hoc HSD tests revealed significant differences on peer ratings of acceptance between the cancer and conjunctivitis illness types ($p < .001$) and AIDS and conjunctivitis illness types ($p < .001$), but not between the cancer and AIDS illness types ($p = .782$). Group means for illness type by behavior are represented in Table 7. Overall group means for ratings of acceptance and assigned blame are represented in Table 8.

Participant Age

A series of correlations were conducted to examine the relationship of participant age with peer ratings of acceptance, assigned blame, previous illness experience, and illness-specific knowledge. The results from these analyses are presented in Table 9. Age correlated significantly with peer ratings of acceptance ($r = -.087$, $p < .05$) and assigned blame ($r = .107$,

Table 7

Means and (Standard Deviations) for PAQ by Condition

Group		Peer Acceptance
Illness type	Behavior type	M *(SD)*
Cancer	Typical	91.32 *(9.54)*
	Withdrawn	84.52 *(12.17)*
	Aggressive	76.66 *(13.14)*
AIDS	Typical	82.86 *(12.61)*
	Withdrawn	81.66 *(12.58)*
	Aggressive	75.05 *(13.23)*
Conjunctivitis	Typical	80.90 *(11.44)*
	Withdrawn	70.25 *(12.64)*
	Aggressive	65.49 *(13.05)*

Table 8

Means and (Standard Deviations) for PAQ by Group

Group	Peer Acceptance *M* *(SD)*
Illness type	
Cancer	83.98 *(13.20)*
AIDS	79.94 *(13.18)*
Conjunctivitis	71.57 *(13.92)*
Symptomatology	
Covert	79.18 *(14.19)*
Overt	77.52 *(14.63)*
Behavior	
Typical	85.25 *(12.06)*
Withdrawn	78.29 *(13.93)*
Aggressive	72.04 *(14.03)*

Table 9

Correlations among Variables of Interest

Variable	Age	Peer Acceptance	Assigned Blame
Previous Illness Experience	.055	.003	.070
Illness-specific knowledge	-.002	.223*	-.110**
Perceived Similarity	---	.526*	---
Peer Acceptance	-.087**	---	-.311*
Assigned Blame	.107**	.311*	---

*$p<.001$ **$p<.05$

$p<.05$) Age was not found to significantly correlate with illness-specific knowledge ($r= -.055$, $p=.965$) or peer previous experience with illness ($r=.055$, $p=.197$). Specifically, older age corresponded with reduced peer ratings of acceptance and elevated ratings of assigned blame.

Assigned Blame

A series of correlations were conducted to examine the relationship of peer ratings of assigned blame with peer ratings acceptance, previous illness experience, and illness-specific knowledge. The results from these analyses are presented in Table 9. Peer ratings of assigned blame correlated significantly with peer ratings of acceptance ($r= -.311$, $p<.001$) and illness-specific knowledge ($r= -.110$. $p<.05$). However, peer ratings of assigned blame were not found to significantly correlate with peer previous experience with illness ($r=.070$, $p=.105$). Specifically, elevated assigned blame ratings corresponded with reduced peer ratings of acceptance and illness-specific knowledge.

Peer Acceptance

A series of correlations were conducted to examine the relationship of peer ratings of acceptance with peer ratings of perceived similarity, previous illness experience, and illness-specific knowledge. The results from these analyses are presented in Table 9. Peer ratings of acceptance correlated significantly with peer ratings of perceived similarity ($r=.526$, $p<.001$) and illness-specific knowledge ($r=.223$, $p<.001$). However, peer ratings of acceptance were not found to significantly correlate with peer previous experience with illness ($r=.003$, $p=.945$). Specifically, elevated acceptance ratings corresponded with elevated peer ratings of perceived similarity and elevated peer ratings of illness-specific knowledge.

First- and Third-person Ratings

Paired-samples *t*-tests were conducted to determine whether differences were observed between first- and third-person ratings of peer acceptance and assigned blame. Significant

differences were found between first- and third-person ratings of both peer acceptance ($t(543)$=8.815, p<.001, *?2*=.378) and assigned blame ($t(543)$=7.692, p<.001, *?2*=.330) with first-person ratings more favorable (i.e., higher acceptance and lower assigned blame) than third-person ratings. Group means for ratings of first- and third-person peer ratings of acceptance and assigned blame are represented in Table 10.

Table 10

Means and Standard Deviations for 1st versus 3rd Person Measures

Measure	Mean *M* *(SD)*
Peer Acceptance Questionnaire (PAQ)	78.34 (14.43)
Peer Acceptance Questionnaire-3rd person (PAQ-F)	75.08 (15.95)
Assigned Blame Questionnaire (ABQ)	5.84 (2.24)
Assigned Blame Questionnaire-3rd person (ABQ-F)	6.36 (2.41)

DISCUSSION

Illness, Symptomatology, and Behavior

An interaction effect between illness type and behavior was observed. The influence of behavior on peer acceptance varied as a function of all three illness types. Specifically, vignette characters with cancer evidenced lower peer ratings of acceptance as a function of all three behavior conditions. Those exhibiting typical behavior were rated most favorably, and those exhibiting aggressive behavior were rated least favorably. With regard to the AIDS illness type, vignette characters exhibiting either typical or withdrawn behavior were rated more favorably than aggressive characters with AIDS. Vignette characters with conjunctivitis exhibiting typical behavior were rated more favorably than either withdrawn or aggressive characters with conjunctivitis. These results suggest that, in general, individuals exhibiting aggressive behavior were accepted less than those exhibiting either typical or withdrawn behavior. This is consistent with previous research (Gottleib, 1975) in which ill children exhibiting positive behaviors were rated more favorably than those exhibiting acting-out behaviors. However, in the conjunctivitis illness condition, characters exhibiting withdrawn behaviors drew ratings of acceptance comparable to those exhibiting aggressive behavior.

Also, the influence of illness type on peer acceptance varied as a function of all three behavior conditions. "Typically" behaving vignette characters with cancer were rated more favorably than characters with either AIDS or conjunctivitis. However, both withdrawn and aggressive vignette characters were rated less favorably if they had conjunctivitis compared to those with either cancer or AIDS. In other words, vignette characters with conjunctivitis were rated significantly lower than those with either cancer or AIDS, except when exhibiting typical behavior, in which case vignette characters with AIDS or conjunctivitis were rated similarly, but less favorably than those with cancer. For this study, illness types were purposefully selected for

the purpose of exploring peer's responsiveness to specific illness dynamics. Illness dynamics that were examined included culturally based illness stereotypes (e.g., AIDS was selected as a medical condition posited to elicit more negative stereotypes than either cancer or conjunctivitis), risk of infection (e.g., conjunctivitis has the highest risk of infection followed by AIDS; cancer is generally not contagious), and morbidity (e.g., AIDS and cancer are considered to be life threatening, while conjunctivitis is not). It was hypothesized that participants would rate vignette characters with AIDS less favorably than characters with either conjunctivitis or cancer because AIDS is an illness exhibiting negative dynamics in more numerous domains (i.e., a diagnosis is accompanied by negative culturally based stereotypes, moderate risk of infection to others, and high morbidity). Therefore, the observed results suggest that participants in this sample were more sensitive toward illness dynamics more immediate in nature (i.e., threat of infection) rather than long-term issues such as stigma and morbidity.

Group differences were not found, however, as a function of symptomatology (overt, covert). This is contradictory to findings from previous research indicating that illnesses with observable symptomatology are seen as less attractive to peers than those with non-observable symptomatology (Potter & Roberts, 1984). Previous researchers examining disability have also interpreted effects on peer preferences as a function of functional versus cosmetic impairment (Richardson et al., 1968; Richardson, 1970; Harper et al. 1986). Specifically, they posited a dichotomy between functional and cosmetic impairment, with functional impairments eliciting lower overall attitudes from elementary age children. Findings from these studies must be viewed with caution, however, given the problems inherent in using mean rankings to determine peer preference (Alessi & Anthony, 1969). Nevertheless, these studies suggest the possibility that main effects on symptomatology may not have been observed in this sample partially as a consequence of failure to include functional impairment as an experimental condition.

Overall then, behavior may potentiate the effect of illness type on peer acceptance for ill individuals. More specifically, ill individuals exhibiting atypical behavior (especially aggressive) tend to be less accepted by peers, especially when diagnosed with medical conditions that capitalize on respondent's previously held connotations regarding perceived threat of infection.

Participant Age

Age correlated negatively with peer ratings of acceptance and positively with assigned blame. These findings are contradictory to others (Tringo, 1970; Higgs, 1975) who have observed that, in samples composed of high school and college students, attitudes toward the disabled tended to be more positive in older respondents. In addition, contrary to Higgs (1975), who found illness knowledge and frequency of contact with the disabled to be positively associated with participant age, age was not found to significantly correlate with illness-specific knowledge or peer previous experience with illness in this sample. However, given that participants in this sample only ranged in age from 17 to 26, it seems likely that these contradictory findings may simply be an artifact of restricted range (i.e., correlations may be based on a set of scores which include a limited range of the possible values) Specifically, the distribution of participant age was positively skewed, with the vast majority (96.5%*)* of participants between the ages of 18 and 21. Therefore, it is impractical to make any conclusions based on the results of these correlations, given the possibility that they may be spurious.

Assigned Blame

Although peer ratings of assigned blame were not found to significantly correlate with previous experience with illness, they did correlate significantly and negatively with ratings of acceptance and illness-specific knowledge. Therefore, higher attributions of personal blame toward the vignette character for his or her health condition and behavior corresponded with lower ratings of acceptance. Also, limited peer illness-specific knowledge was linked to greater

attributions of personal responsibility. These findings are in harmony with prior research that has found attributions of personal responsibility to be a general construct relating to diminished acceptance (Santilli & Roberts, 1993; Siegelman & Begley, 1987) and greater knowledge of illness (Santilli & Roberts, 1993). This suggests that limited illness-specific knowledge regarding modes of transmission may lead peers to make erroneous assumptions that previous behavior may have contributed directly to onset of illness, resulting in elevated attributions of blame and decreased acceptance. These results are particularly significant in light of the relative dearth of studies that have examined attributions of responsibility, either specific to ill individuals or in general.

Peer Acceptance

Contrary to Voeltz's (1980) findings that participants were more likely to indicate a desire to interact socially with disabled adults with as frequency of contact increased, peer ratings of acceptance in the present study did not significantly correlate with peer previous experience with illness. As predicted, however, peer ratings of acceptance did correlate significantly and positively with peer ratings of perceived similarity and illness-specific knowledge. Explicitly, greater peer ratings of similarity related to greater attributions of acceptance. These findings run counter to the conclusion of Novak and Lerner (1968) that individuals perceiving themselves as similar to another individual might perceive themselves as more vulnerable to a salient negative characteristic of that individual, resulting in decreased favorability due to sense of personal threat. It may be the case that any negative characteristics exhibited by the vignette characters were not perceived as sufficiently salient to produce effects similar to those described by Novak and Lerner (1968). However, these observations are consistent with Maieron and colleagues (1996), who observed no negative association between perceived similarity and peer ratings of acceptance. A great deal of literature supports the notion

of social clustering predicated by perceived commonalities among group members (Baumeister & Leary, 1995). It seems likely then, that participants in this sample better able to identify with the vignette character in some domain were likely to endorse higher levels of acceptance.

Also, more accurate illness-specific knowledge was associated with greater attributions of acceptance. These findings are inconsistent with Potter and Roberts (1984), who observed that provision of information about the nature of an observable illness tended to elicit lower ratings of acceptance. Maieron (1996) examined this phenomenon and observed positive changes in acceptance only when subjects were provided information specific to how a contagious illness (AIDS) was *not* transmitted. This suggests that, as with assigned blame, fear of contagion may moderate peer acceptance, specifically in regards to misconceptions about modes of transmission.

First- and Third-Person Ratings

As predicted, significant differences were found between first- and third-person ratings of both peer acceptance and assigned blame, with first-person ratings observed as more favorable (i.e., higher acceptance and lower assigned blame) than third-person ratings. This is consistent with prior research indicating that peers tend to rate children with chronic illness more positively when responding from a first-person perspective than when responding from a third-person perspective (Morgan et. al, 1998). These results provide support for the view that with age, individuals typically become socialized toward expressing only kind and altruistic statements about others (Gottleib, 1975).

Strengths of the Study

Several methodological limitations from previous research were addressed in this study. First, although the current body of literature has made the necessary initial step in examining several possible variables influencing peer perception of illness in isolation, these phenomena

rarely occur in isolation within the environmental context. Very few studies have examined the effects of these variables when manipulated systematically in combination with one another. The present study examined peer attributions about ill individuals by varying levels across the domains of illness type, behavior, and symptomatology in combination. As a result, the notion has been forwarded that resulting data may be more contextually valid, presenting an enhanced picture of the diverse mechanisms shaping peer perception of chronically ill individuals.

Second, relevant findings from previous research were integrated and extended toward a more elaborate illustration of the complex mechanisms driving perceptions of individuals with chronic illness. While micro-theories abound in the interpretation of results from previous studies, no attempt has yet been made to integrate these theoretical mechanisms for the purpose of directing future research, resulting in a disjointed approach that has encumbered theory development.

Third, it was proposed that stimulus materials used by previous researchers were inconsistent with the manner in which participants typically interact with chronically ill peers, thus limiting the extent to which contextually valid responses were obtained from participants. For the present study, stimulus materials were specifically designed to elicit responses from participants that are more contextually valid than procedures used in the past.

Fourth, several measures were developed and psychometrically evaluated for use in exploring relevant domains of interest. This contribution is notable given (a) the lack of established consensus regarding the operational definition of these constructs to this point and (b) the general dearth of reliable and validated measures currently available to researchers.

Limitations of the Study

Several issues specific to the sample are noteworthy. First, the age range of individuals recruited for participation was restricted, possibly resulting in spurious correlations between age

and other relevant variables examined in this study. Second, the sample was primarily Euro-American and had parents who completed a 2-year college degree or more, leading to complications regarding generalizability to the broader population. Third, prevalence is an issue posited to influence attitudes towards ill individuals (Santilli & Roberts, 1993). This issue is significant for the current sample, as no information was available to researchers regarding prevalence of relevant medical illnesses within the particular community from which this sample was derived.

Complications concerning generalizability extend to the stimuli utilized within the present study. First, it must be stipulated that generalizing these results from vignettes to the actual classroom environment and from imagined to real individuals suffering from illness is inherently tenuous. Accordingly, generalizing from the educational context depicted within the vignette toward other environmental contexts becomes even more problematic. Third, all vignettes were specifically designed to capitalize on respondent's previously held connotations of ill individuals. Due to intrinsic variability in the cognitive (imaginative) abilities of individuals within the general population, characteristics of vignette characters may not have been salient enough to all participants to produce hypothesized attributional effects. This may be evidenced by the relatively small main effect sizes in acceptance observed across the conditions of illness type, symptomatology, and behavior.

Finally, although measures developed for use in this study ostensibly improve upon instruments currently available to researchers, they are to this point unproven, and as such lack the empirical validation necessary to facilitate forthright interpretation of results from the present study. It is hoped that these measures will subsequently be utilized and further empirically validated in future studies.

Implications for Future Research

In light of the findings that atypical behavior may potentiate the effect of illness type on peer acceptance for ill individuals, especially for individuals exhibiting aggressive behavior and diagnosed with medical conditions that capitalize on respondent's perceived threat of infection, particular attention should focus on temperament and behavior for ill individuals who re-integrate into an academic setting. Although peers may be tolerant toward individuals exhibiting internalizing behaviors, those exhibiting externalizing behaviors evidence a significantly higher risk for peer rejection. This suggests that therapeutic interventions for ill individuals should focus not only on social skills training, but also on techniques designed to manage and redirect acting out behaviors.

In addition, the positive relationship found between illness-specific knowledge and peer acceptance supports the utility of implementing school programs aimed at illness-specific education to increase peer acceptance. However, the negative correlation between illness-specific knowledge and assigned blame makes it likely that increasing peer acceptance will be difficult when individuals are erroneously held responsible for their illness. Education should specifically target popular misconceptions regarding modes of illness and disease transmission. The advantages of this approach are 2-fold: it serves to challenge the cultural stereotypes associated with particular illnesses while simultaneously reducing the degree of perceived threat by peers, a variable found to be most closely related to peer acceptance in the present study.

Next, this study provided added support for the view that peers, as they become more socialized with age, tend to rate individuals with chronic illness more positively when responding from a first-person perspective than when responding from a third-person perspective. Therefore, future researchers should carefully consider age and cognitive level when evaluating attributions about ill individuals.

CONCLUSION

In spite of the effects of illness type and behavior on peer acceptance observed in the current study, the relatively small observed effect sizes suggest the existence of other unidentified contingencies that function to influence peer acceptance of ill individuals. These variables may include but are not limited to (a) personality characteristics, (b) demographic variables, (c) dynamics involved with group formation, (d) geographic location, (e) community prevalence of relevant illnesses, (f) cultural attitudes, and (g) previous contextually specific interactions with ill individuals. Future studies should examine these variables to determine how they might interact with variables included within the present study to operate on peer acceptance. In this way, more comprehensive and innovative strategies might be developed for the purpose of optimizing acceptance for those individuals reintegrated into academic settings.

REFERENCES

Alessi, D. F., & Anthony, W. A. (1969). The uniformity of children's attitudes toward Physical disabilities. *Exceptional Children, 35,* 543-545.

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117,* 294-529.

Caldarella, P., & Merrell, K. (1997). Common dimensions of social skills of children and adolescents: A taxonomy of positive behaviors. *School Psychology Review, 26,* 264-278.

Goh, D. S. (1993). The development of the attitudes toward AIDS scale. *College Student Journal, 27,* 208-214.

Gottlieb, J. (1975). Attitudes toward retarded children: Effects of labeling and behavioral aggressiveness. *Journal Educational Psychology, 67, 581-585.*

Graetz, B., & Shute, R. (1995). Assessment of peer relationships in children with asthma. *Journal of Pediatric Psychology, 20,* 205-216.

Gresham, F. M., & Elliott, S. N. (1984). Assessment and classification of children's social skills: A review of methods and issues. *School Psychology Review, 13,* 292-301.

Gresham, F. M. (1998). Social skills training: Should we raze, remodel, or rebuild? *Behavioral Disorders, 24,* 19-25.

Gresham, F. M., Sugai, G., & Horner, R. H. (2001). Interpreting outcomes of social skills training for students with high-incidence disabilities. *The Council for Exceptional Children, 67,* 331-344.

Harper, D. C., Wacker, D. P., & Cobb, L. S. (1986). Children's social preferences toward peers with visible physical differences. *Journal of Pediatric Psychology, 11,* 323-342.

Higgs, R. W. (1975). Attitude formation – contact of information? *Exceptional Children, 41,* 496-497.

Hymel, S., Rubin, K., Rowden, L., & LeMarc, L. (1990). Children's peer relationships: Longitudinal prediction of internalizing and externalizing problems from middle to late childhood. *Child Development, 61,* 2004-20021.

Kaiser, H. F. (1981). A revised measure of sampling adequacy for factor-analytic data matrices. *Educational and Psychological Measurement, 41,* 379-381.

Katz, P. A., Katz, I., & Cohen, S. (1976). White children's attitudes towards blacks and the physically handicapped: A developmental study. *Journal of Educational Psychology, 65,* 20-24.

Kavale, K. A., Mathur, S. R., Forness, S. R., Rutherford, R. B., & Quinn, M. M. (1997). Effectiveness of social skills training for students with behavior disorders: A meta-analysis. *Advances in Learning and Behavioral Disabilities, 11,* 1-26.

La Greca, A. M. (1993). Social skills training with children: Where do we go from here? *Journal of Clinical Child Psychology, 22,* 288-298.

La Greca, A. M., & Bearman, K. J. (2000). Commentary: Children with pediatric conditions: Can peers' impressions be managed? And what about their friends? *Journal of Pediatric Psychology, 25,* 147-149.

Lau, R. R., & Hartman, K A. (1983). Common sense representations of common illnesses. *Health Psychology, 2,* 167-187.

Lavigne, J. V., & Faier-Routman, J. (1992). Psychiatric adjustment to pediatric physical disorders: A meta-analytic review. *Journal of Pediatric Psychology, 17,* 133-157.

Leake, B., Nyamathi, A., & Gelberg, L. (1997). Reliability, validity, and composition of

a subset of the centers for disease control and prevention acquired immunodeficiency syndrome knowledge questionnaire in a sample of homeless and impoverished adults. *Medical Care, 35,* 747-755.

Maieron, M. J., Roberts, M. C., & Prentice-Dunn, S. (1996). Children's perceptions of peers with AIDS: Assessing the impact of contagion information, perceived similarity, and illness conceptualization. *Journal of Pediatric Psychology, 21,* 321-333.

Michielutte, R., & Diseker, R. A. (1982). Racial differences in knowledge of cancer: A pilot study. *Social Science and Medicine, 16,* 245-252.

Morgan, S. B., Bieberich, A. A., Walker, M., & Schwerdtfeger, H. (1998). Children's willingness to share activities with a physically handicapped peer: Am I more willing than my classmates? *Journal of Pediatric Psychology, 23,* 367-375.

Nabors, L. (1997). Playmate preferences of children who are typically developing for their classmates with special needs. *Mental Retardation, 35,* 107-113.

Novak, D. W., & Lerner, M. J. (1968). Rejection as a consequence of perceived similarity. *Journal of Personality and Social Psychology, 9,* 147-152.

Potter, P. C., & Roberts, M. C. (1984). Children's perceptions of chronic illness: The roles of disease symptoms, cognitive development, and information. *Journal of Pediatric Psychology, 9,* 13-25.

Richardson, S. A., Goodman, N., Hastorf, A. H., & Dornbusch, S. M. (1961) Cultural uniformity in reaction to physical disabilities. *American Sociological Review, 26,* 241-247.

Richardson, S. A. (1970). Age and sex differences in values toward physical handicaps. *Journal of Health and Social Behavior, 11,* 1970.

Ryan, K. M. (1981). Developmental differences in reactions to the physically disabled.

Human Development, 24, 240-256.

Santilli, L. E., & Roberts, M. C. (1993). Children's perceptions of ill peers as a function of illness conceptualization and attributions of responsibility: AIDS as a paradigm. *Journal of Pediatric Psychology, 18,* 193-207.

Schneider, B. H. (1992). Didactic methods for enhancing children's peer relations: A quantitative review. *Clinical Psychology Review, 12,* 363-382.

Sigelman, C. K., & Begley, N. L. (1987). The early development of reactions to peers with controllable and uncontrollable problems. *Journal of Pediatric Psychology, 12,* 99-115.

Sigelman, C., Maddock, A., Epstein, J., & Carpenter, W. (1993). Age differences in understandings of disease causality: AIDS, colds, and cancer. *Child Development, 64,* 272-284.

Stone, A. J., & Siegel, J. M. (1986). Correlates of accurate knowledge of cancer. *Health Education Quarterly, 13,* 39-50.

Tetlock, P. E., & Levi, A. (1982). Attribution bias: On the inclusiveness of the cognition-motivation debate. *Journal of Experimental Social Psychology, 18,* 68-88.

Tringo, J. L. (1970). The hierarchy of preference toward disability groups. *The Journal of Special Education, 4,* 295-306.

Varni, J. W., Katz, E. R., Colegrove, R., & Dolgin, M. (1993). The impact of social skills training on the adjustment of children with newly diagnosed cancer. *Journal of Pediatric Psychology, 18,* 751-767.

Voeltz, L. M., (1980). Children's attitudes toward handicapped peers. *American Journal of Mental Deficiency, 84,* 455-464

VITA

Name: Jonhenry C. Grizzle
Address: Dept. of Psychology
Texas A&M University
4235 TAMU
College Station, TX 77843-4235
Email: jcgrizzle@hotmail.com

Education:

- *H.S. Diploma: Plano East Senior High School, Plano, Texas, June 1993*
- B.A.: Psychology, The University of Texas at Dallas, December 1999
- M.S.: Clinical Psychology, Texas A&M University, August 2004

Honors and Awards:

- Poster Presentation, 1st National Conference on Child Health Psychology, Spring 2004
- Poster Presentation, 37th AABT Annual Convention, Fall 2003
- Heffer, R.W., Grizzle, J., Fiala, S., Lane, M.M., & Rosenthal, E. (2003, May). lllness management and coping in children with diabetes or asthma. Wal-Mart Foundation Community Bonus Grant. (Funded for $1,000).
- Regent Graduate Fellowship, Texas A&M University, 2001
- Cum Laude Graduate, University of Texas at Dallas with BA in Psychology 1999
- Psi Chi, 1999
- Music Scholarship, Collin County Community College, 1993-1994
- Music Scholarship, Texas Conservatory for Young Artists, 1993

Professional Positions:

- **Clinic Coordinator, Texas A&M Psychology Clinic**, College Station, TX, Summer 2004 – present
- **Psychology 305 (Psychology of Adjustment) lecturer,** Spring session 2004
- **Graduate Student Counselor:**
  1. **Texas A&M Psychology Clinic**, College Station, TX, Summer 2002 - present
  2. **Walker County Probation**, Huntsville, TX, Fall 2003 – Spring 2004
  3. **Grimes County Probation**, Anderson, TX, Fall 2002 – Summer 2003
  4. **Bryan Juvenile Probation**, Bryan, TX, Summer 2002 - Fall 2002
- **ABA Behavioral Therapist for Autistic Children**, Self employed. Full-position, 2000
- **Research Assistant**, The University of Texas at Dallas. Part-time position, 1999

Membership in Professional Associations:

- AABT (graduate student affiliate), 2003-present
- American Psychology Association Division 54 (graduate student affiliate) 2003-present
- Psi Chi (National Honor Society in Psychology), 1998-1999

.